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Re: "Commentary: Oral cancer examinations and lesion discovery as reported by U.S. general dentists"

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ABSTRACT

This is a letter to the Editor of Preventive Medicine responding to Drs. Al-Soneidara, Madathilb, and Nicolaub's "Commentary: Oral cancer examinations and lesion discovery as reported by U.S. general dentists." (Al-Soneidar WA, Madathil SA, Nicolau B. Commentary: Oral cancer examinations and lesion discovery as reported by U.S. general dentists. Preventive medicine 2019;124:124–5).

We thank Drs. Al-Soneidara, Madathilb, and Nicolaub, for their thoughtful Commentary (Al-Soneidar et al., 2019), which focuses on our manuscript "Oral cancer examinations and lesion discovery as reported by U.S. general dentists: findings from the National Practice-based Research Network" (Psoter et al., 2019). In our response, we address their comments and concerns.

The Commentary's positive remarks referred to our use of a large database of general dentists (GDs), a questionnaire designed by a panel of experts, our efforts to minimize non-response, and our statistical comparison of respondents versus non-respondents. Among the Commentary's concerns was the fact that we did not utilize a weight-based standardization technique to estimate, within the Network, the number of oral lesions suspicious for, or histologically confirmed with oral cancer.

To address that concern, it is helpful to mention that at project initiation approximately 3000 clinically active GDs were enrolled in the National Dental Practice-Based Research Network (Network). Using that sampling-frame, a random sample of 2000 Network GDs was invited to participate in determining discovery rates within the Network. This sampling approach has been described as an "equal probability selection method of sampling," with simple random sampling a special form of the method when the "population element is the only unit sampled" (Caplan and Gansky, 1999). Because no complex sampling methodology was necessary and the survey design probability of GD selection was equal, the need for variance adjustment was mitigated (Caplan and Gansky, 1999). Additionally, the parsimonious regression models that adjusted for potential confounders were consistent with the cross-sectional study design to determine Network lesion discovery prevalence.

A further concern of the Commentary related to our estimate of the number of oral cancer cases diagnosed by GDs in the United States. Please note that a direct investigation into U.S. GD oral lesion/cancer discovery rates would have been logistically and cost prohibitive. For our national estimate, we considered the Network GDs to be representative of the U.S. GD population because "Network dentists have much in common with dentists at large" (Makhija et al., 2009; Gilbert et al., 2013). Applying Network discovery rates to the number of U.S. GDs produced the annual U.S. national lesion discovery estimates. *However*, Network GDs are a self-selected group and in recognition of that fact we clearly state that the true U.S. GD discovery rate may be less than that of the Network (we even reduced the estimated number of discovered oral cancers by 50%). Despite this intentional reduction, our findings suggest that "*general dentists appear to identify a considerable proportion of U.S. OC cases and to be an important frontline component in the battle against oral cancer*" (Psoter et al., 2019); of particular importance since there is insufficient evidence supporting OCE conducted by medical practitioners (US Preventive Services Task Force, n.d.). This is the take home message of our work and should be considered in developing approaches for shifting the proportions of stage-at-diagnosis from later-staged cancers to earlier stages.

The Commentary also questioned whether we accounted for the fact that some GDs examine more patients than others. In our analyses in which "number of patient encounters" was viewed as a possible confounder, we included "hours worked per week" as a covariate in the applicable models.

The Commentary presents approaches to increase dentist lesion discovery rates, including dental student training as a foundation for increasing early lesion discovery. However, there will be a lag period until these well-trained graduates comprise a significant proportion of practicing dentists and meaningfully influence discovery rates. Additionally, these new practitioners will likely experience some of the same barriers to quality and timely oral cancer examinations as current practitioners.

The goals of reducing oral cancer incidence and achieving a downward shift in the stage at diagnosis will likely require a multi-factorial approach that includes education, training, regulatory, and policy options (Morse et al., 2011; Psoter et al., 2015).

Acknowledgement

The views expressed here are those of the author and do not necessarily reflect those of the National Dental Practiced-Based Research Network or the National Institute of Dental and Craniofacial Research.

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